

ABSTRACT OF THE DISCLOSURE

An electronically reconfigurable battery includes a number of battery modules selectively interconnected by a number of electronic switches, wherein a selectable number of battery modules may be connected either in a series configuration or in a parallel configuration, as a result of placing selected switches of said plurality of switches in open states or closed states. In a parallel configuration, the battery provides power to a primary load, such as a propulsion load for a vehicle. In a series configuration, the battery is configured to provide a high voltage and high power output to a short-term and/or pulsed load, such as an additional load provided on the vehicle. Current from the battery is limited in one of three ways: a) by the batteries themselves; b) a current limiting device or system in series with the total erected battery; or c) a single level power converter or current limiter that is used to erect and charge the capacitor bank in a sequential one level at a time manner until the battery is fully erected and the capacitor is fully charged.